



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,591	07/16/2003	Shih-Hsien Wu	TAIW 813	7448

23995 7590 01/12/2009
RABIN & Berdo, PC
1101 14TH STREET, NW
SUITE 500
WASHINGTON, DC 20005

EXAMINER

NADAV, ORI

ART UNIT	PAPER NUMBER
----------	--------------

2811

MAIL DATE	DELIVERY MODE
-----------	---------------

01/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/619,591

Applicant(s)

WU ET AL.

Examiner

Ori Nadav

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 60 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification for the claimed limitation of an inorganic substrate being fully covered by said two organic substrates, as recited in dependent claim 60, because the sides of the inorganic substrate are not covered by said two organic substrates.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 37-63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claimed limitation of outer input/output ports, as recited in claims 37 and 49, is unclear as to the structural relationship between said outer input/output port and the claimed laminated substrate.

The claimed limitation of “which includes a circuit”, as recited in claims 44 and 56, is unclear as to which element includes said circuit.

The claimed limitation of “through the two organic substrates”, as recited in claim 49, is unclear as to what occurs through the two organic substrates.

The claimed limitation of “at least one passive component”, as recited in claims 45 and 46, is unclear as to whether said at least one passive component is the same element recited earlier in the claim, or a different element.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 37-38, 45-47, 49-50, 53 and 57-59, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Satoh et al. (6,933,601).

Art Unit: 2811

Regarding claims 37-38, Satoh et al. teach in figure 11 and related text a composite laminated substrate for integrated and minimized electronic circuits, comprising:

an inorganic glass substrate 1 having at least one passive component 20 embedded therein; and

an organic substrate 2 which is laminated to one side of the inorganic substrate and which has circuits for electrical connections between outer input/output port and the at least one passive component of the inorganic substrate.

Regarding claims 45-47, Satoh et al. teach in figure 11 and related text the organic substrate further comprises at least one passive component, wherein the at least one passive component is selected from the group consisting of a capacitor, an inductor, a resistor and any mixture thereof, and wherein the organic substrate is a built-up organic substrate provided on the inorganic substrate.

Regarding claims 49-50 and 53, Satoh et al. teach in figure 11 and related text a composite laminated substrate for integrated and minimized electronic circuits, comprising:

an inorganic substrate 1 having at least one passive component inductor 4 formed thereon or embedded therein; and

two organic substrates 2 which are laminated to respective sides of the inorganic substrate and integrated therewith, and which have circuits for electrical connections between outer input/output ports and the at least one passive component of the inorganic substrate through the two organic substrates,

wherein the inorganic substrate is comprised of a material selected from the group consisting of ceramic, silicon and glass.

Regarding claims 57-59, Satoh et al. teach in figure 11 and related text at least one of the two organic substrates further comprises at least one passive component, wherein the at least one passive component of the at least one of the two organic substrates is selected from the group consisting of a capacitor, an inductor, a resistor, and any mixture thereof, and wherein at least one of the two organic substrates is a built-up organic substrate provided on the inorganic substrate

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-49, 51-52, 54-56 and 60-63, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh et al. in view of Nishide et al. (5,827,605).

Regarding claims 37-38 and 49, Satoh et al. teach in figure 11 and related text a composite laminated substrate for integrated and minimized electronic circuits, comprising:

- an inorganic glass substrate 1; and

- an organic substrate 2 which is laminated to one side of the inorganic substrate and which has circuits for electrical connections between outer input/output port and the at least one passive component of the inorganic substrate.

Satoh et al. do not explicitly state that the inorganic substrate has at least one passive component embedded therein.

Nishide et al. teach in figure 1 and related text an inorganic substrate 2 having at least one passive component 6 embedded therein.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an inorganic substrate having at least one passive component embedded therein in Satoh et al.'s device, in order to reduce the size of the device by incorporating passive elements within the inorganic substrate.

Regarding claims 39 and 51, Satoh et al. teach the at least one passive component is one of a thick film or thin film passive component, but does not teach using ceramic substrate.

Nishide et al. teach in figure 1 and related text using ceramic substrate 2.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use ceramic substrate in prior art's device in order to form the device of a conventional substrate material, of which official notice is taken.

Regarding claims 40 and 52, Satoh et al. teach the at least one passive component is a semiconductor fabricated passive component, but does not teach using silicon substrate.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use silicon substrate in prior art's device in order to form the device of a conventional substrate material, of which official notice is taken.

Regarding claims 41, 44-47 and 56-59, Satoh et al. teach in figure 11 and related text the at least one passive component is selected from the group consisting of a capacitor, an inductor, a resistor and any mixture thereof, and

the organic substrate further comprises at least one passive component, wherein the at least one passive component is selected from the group consisting of a capacitor, an inductor, a resistor and any mixture thereof, and wherein the organic substrate has an outer surface layer is a built-up surface layer which includes a circuit, and an organic substrate provided on the inorganic substrate.

Art Unit: 2811

Regarding claims 42-43 and 54-55, prior art does not explicitly state that the organic substrate is composed of a plurality of stacked printed circuit boards with each having its own respective separate circuitry. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an organic substrate is composed of a plurality of stacked printed circuit board with each having its own respective separate circuitry in prior art's device in order to reduce the size of the device.

Regarding claims 48 and 61, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a bonding layer which is provided between the inorganic substrate and the organic substrate, and which bonds together the inorganic substrate and the organic substrate in prior art's device, in order to improve the structural integrity of the device.

Regarding claim 60, prior art's device includes a covering layer (the top layer) which is provided on the inorganic substrate and covers the inorganic substrate, which integrates the inorganic substrate with one of the two organic substrates, and which comprises circuits for providing electrical connections between the at least one passive component of the inorganic substrate and said one of the two organic substrates. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to fully cover the inorganic substrate said two organic substrates, in prior art's device, in order to simplify the processing steps of making the device.

Regarding claims 62-63, prior art's device includes the at least one passive component is separated from, so as to not directly contact, the two organic substrates.

Response to Arguments

Applicant's arguments with respect to claims 37-63 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B-D are cited as being related to composite laminated substrates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ori Nadav whose telephone number is 571-272-1660. The examiner can normally be reached between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on 571-272-4670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O.N.
1/10/2009

/ORI NADAV/
PRIMARY EXAMINER
TECHNOLOGY CENTER 2800